STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES

AIR POLLUTION CONTROL REGULATION NO. 34

RHODE ISLAND MOTOR VEHICLE INSPECTION/MAINTENANCE PROGRAM

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AUTHORITY: These regulations are authorized pursuant to R.I. Gen. Laws § 31-47-1, as amended, and have been promulgated pursuant to the procedures set forth in the R.I. Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

TABLE OF CONTENTS

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RHODE ISLAND MOTOR VEHICLE INSPECTION/MAINTENANCE PROGRAM

34. Rhode Island Motor Vehicle Inspection/Maintenance Program (Rhode Island I/M Program)

34.1 Definitions

Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to the Rhode Island Air Pollution Control General Definitions Regulation. As used in this regulation, the following terms shall, where the context permits, be construed as follows:

34.1.1 **"Adjusted loaded vehicle weight"** means the numerical average of vehicle curb weight and gross vehicle weight rating.

34.1.2 **"Authorized Inspection Repair Station"** and **"AIRS"** mean an inspection location authorized by the Department to provide motor vehicle safety and emission inspection and repairs, or inspections only.

34.1.3 **"Calibration"** means the act of checking and adjusting the exhaust emission analyzer by introducing reference gases of known concentrations into the analyzer.

34.1.4 **"CIRT"** means a Certified Inspection Repair Technician certified by the Department of Revenue to provide both inspection and repairs for motor vehicle safety and emissions.

34.1.5 **"CIT"** means a Certified Inspection Technician certified by the Department of Revenue to perform motor vehicle safety and emission inspections only.

34.1.6 **"Curb weight"** means the actual or the manufacturer's estimated weight of the vehicle in operational status with all standard equipment and weight of fuel at nominal tank capacity, and the weight of optional equipment computed in accordance with 40 CFR 1832-01.

34.1.7 **"Day"** means a calendar day, unless otherwise designated.

34.1.8 **"Dealer"** means a person or entity engaged in the business of buying, selling, or exchanging vehicles and who has an established place of business for such purpose and as further defined in section 31.1.19 (a) of the Motor Vehicle Code.

34.1.9 **"Exhaust emissions standard"** means the maximum allowable levels of carbon monoxide, hydrocarbons and oxides of nitrogen appropriate for the age and type of vehicle tested.

34.1.10 **"Gross vehicle weight rating (GVWR)"** is the weight value specified by the vehicle manufacturer on the Federal weight certification label as the loaded weight of a vehicle.

34.1.11 **"IM240"** means the transient dynamometer schedule described in EPA Report number EPA-AA-EPSD-IM-93-1 April 1994.

34.1.12 **"Inspection"** means the testing of the exhaust and functional emission controls along with a safety inspection of a subject vehicle.

34.1.13 **"Inspection station"** means an inspection facility for motor vehicle safety, on-board diagnostics and emissions inspection operated by an AIRS.

34.1.14 **"Loaded vehicle weight"** means the vehicle's curb weight plus 300 pounds.

34.1.15 **"Model year"** means the manufacturer's annual production period for each engine family which includes January 1 of a calendar year or, if the manufacturer has no annual production period, the calendar year. In the case of any motor vehicle manufactured in two or more stages, the time of manufacture shall be the date of completion of the chassis.

34.1.16 **"Motor vehicle"** means every motor vehicle which is self-propelled, except vehicles moved exclusively by human power and motorized wheelchairs.

34.1.17 **"New Motor Vehicle"** means a motor vehicle that the equitable or legal title has never been transferred to the first person who in good faith purchases the vehicle for purposes other than resale.

34.1.18 **"Operator"** means any motorist, owner or lessee in control of a motor vehicle.

34.1.19 **"On-board diagnostics"** and **"OBD"** mean the system that monitors and records the operations and faults of a vehicle's emissions controls and related systems.

34.1.20 **"RI2000"** means the transient dynamometer emissions test described in the Department of Environmental Management APC Regulation No. 34.

34.1.21 **"Rhode Island I/M Program"** means the Rhode Island Motor Vehicle Inspection/Maintenance Program.

34.1.22 **"Rhode Island I/M Program Manager"** means a person, business firm, partnership, or corporation with whom the Department has a contract that provides for the establishment and operation of the Rhode Island Motor Vehicle Inspection/Maintenance Program.

34.1.23 **"Remote Sensing Device"** is a device which directs an infra-red or laser beam across a lane of traffic to instantly detect and read the concentrations of pollutants in a vehicle's exhaust.

34.1.24 **"Safety and emission inspection program"** means an enhanced vehicle emission inspection program as defined by the Environmental Protection Agency including, but not limited to, a network of computerized emission analyzers, on-road testing, and inspection of vehicle safety devices through an inspection program.

34.1.25 **"Test" and "testing"** mean the use of analyzers and diagnostic equipment as appropriate and the application of techniques, methods, policies and procedures established or approved by the Department for the purpose of comparing emission levels and/or operating systems in vehicles to regulatory safety and emission standards.

34.1.26 **"Transient emission test"** means the quantitative measurement and comparison to established standards of a vehicle's exhaust emissions over a specified maximum time period while operating the vehicle on an inertia weight loaded dynamometer over a specified driving cycle.

34.1.27 **"Year"** means a calendar year.

34.2 Applicability

These regulations apply to all motor vehicles subject to the inspection requirements of the Rhode Island Motor Vehicle Inspection/Maintenance Program, Safety and Emissions Control Regulation No. 1.

34.3 Inspection Standards

These regulations establish the following standards and criteria for motor vehicle emissions inspections. These regulations are devised to give consideration to the levels of emissions reduction necessary to achieve and maintain federal and state ambient air quality standards and the levels necessary to protect human health and the environment. The standards and criteria shall include, but not be limited to, a requirement to test the emissions of motor vehicles for hydrocarbons (HC), carbon monoxide (CO) and oxides of nitrogen (NOx) using an exhaust emissions test, and/or the examination of a vehicle's on-board diagnostic system, using the RI2000 test analyzer.

Vehicles subject to the Rhode Island I/M Program shall be inspected for compliance with the following standards, criteria and procedures using an exhaust emissions test, evaporative emissions test, and on-board diagnostics inspection.

For gasoline-powered vehicles, all 1996 and newer vehicles should be tested with OBD. If a gasoline powered vehicle not originally designed to have OBD is presented, it will be tested to the appropriate dynamometer standards. If the vehicle can not be tested on a dynamometer (such as an all wheel drive vehicle), it will receive the two speed idle test.

OBD-equipped diesel vehicles should be tested with OBD. If the vehicle is diesel and can not be tested using OBD, it will be tested with the dynamometer opacity test. If the vehicle can not be tested on a dynamometer (such as an all wheel drive vehicle), it will not be subjected to an emissions test.

34.4 Exhaust Emissions Standards

34.4.1 Phase-in Standards

The phase-in standards (tables 1-3) shall apply for two years after the inspection requirement commences.

DYNAMOMETER EXHAUST EMISSIONS STANDARD

Light Duty Vehicles			
	Hydrocarbons (grams per mile)	Carbon Monoxide (grams per mile)	Oxides of Nitrogen (grams per mile)
1996 and newer	2.25	23.74	3.25
1991 – 1995	3.06	30.99	4.09
1983 – 1990	4.70	45.48	7.21
1981 – 1982	4.70	88.96	7.21
1980	4.70	88.96	9.92
1977 – 1979	15.92	132.44	9.92
1975 – 1976	15.92	132.44	14.92
Pre 1975 (advisory)	15.92	132.44	14.92
Light Duty Trucks 1 Trucks less than or equal to 6,000 pounds GVWR			
	Hydrocarbons (grams per mile)	Carbon Monoxide (grams per mile)	Oxides of Nitrogen (grams per mile)
1996 and newer 3,750 LVW or less	2.25	23.74	3.25
1996 and newer Greater than 3,750 LVW	2.66	30.99	4.09
1991 – 1995	5.51	88.96	4.92

1988 – 1990	7.15	117.95	8.46
1984 – 1987	10.31	117.95	11.59
1979 – 1983	15.92	146.93	11.59
1975 – 1978	16.94	175.92	14.92
Pre 1975 (advisory)	16.94	175.92	14.92
Light Duty Trucks 2 **Trucks greater than 6,000 pounds GVWR**			
	Hydrocarbons (grams per mile)	Carbon Monoxide (grams per mile)	Oxides of Nitrogen (grams per mile)
1996 and newer 5,750 ALVW or less	2.66	30.99	4.09
1996 and newer greater than 5,750 ALVW	5.51	88.96	6.59
1991 – 1995	5.51	88.96	7.42
1988 – 1990	7.15	117.95	8.25
1984 – 1987	10.31	117.95	11.59
1979 – 1983	15.92	146.93	11.59
1975 – 1978	16.94	175.92	14.92
Pre 1975 (advisory)	16.94	175.92	14.92

LVW means loaded vehicle weight. ALVW means adjusted loaded vehicle weight.

TWO SPEED IDLE EXHAUST EMISSIONS STANDARD

Light Duty Vehicles		
Idle and 2500 RPM Cutpoints		
	Hydrocarbons (ppm)	Carbon Monoxide (percent)
1981 and later	220	1.2
1979-1980	300	2.5
1975-1978	300	3.0
1968-1974	700	6.0
Pre-1968	800	7.0
Light Duty Trucks 1 **Trucks less than or equal to 6,000 pounds GVWR**		
Idle and 2500 RPM Cutpoints		
	Hydrocarbons (ppm)	Carbon Monoxide (percent)
1981 and later	220	1.2
1979-1980	300	2.5
1975-1978	300	3.0
1968-1974	700	6.0
Pre-1968	800	7.0
Light Duty Trucks 2 **Trucks greater than 6,000 pounds GVWR**		
Idle and 2500 RPM Cutpoints		
	Hydrocarbons (ppm)	Carbon Monoxide (percent)
1981 and later	220	1.2
1979-1980	300	2.5
1975-1978	300	3.0
1968-1974	700	6.0
Pre-1968	800	7.0

DIESEL VEHICLE OPACITY EMISSIONS STANDARD

All Light-Duty Vehicles and Trucks up to 8,500 lbs. GVWR		
Model Year	**Diesel Smoke Opacity Cutpoints (%)**	
	Loaded	**Idle**
All	20%	20%

34.4.2 Final Standards

The final standards shall apply beginning two years after the inspection requirement commences and continue thereafter.

DYNAMOMETER EXHAUST EMISSIONS STANDARD

Light Duty Vehicles

	Hydrocarbons (grams per mile)	Carbon Monoxide (grams per mile)	Oxides of Nitrogen (grams per mile)
1996 and newer	1.84	16.50	2.42
1991 – 1995	2.25	23.74	3.25
1984 – 1990	2.25	23.74	3.25
1981 – 1982	2.25	45.48	3.25
1980	2.25	45.48	6.59
1977 – 1979	6.74	96.21	6.59
1975 – 1976	6.74	96.21	9.92
Pre 1975 (advisory)	15.92	132.44	14.92

Light Duty Trucks 1
Trucks less than or equal to 6,000 pounds GVWR

	Hydrocarbons (grams per mile)	Carbon Monoxide (grams per mile)	Oxides of Nitrogen (grams per mile)
1996 and newer 3,750 LVW or less	1.84	16.50	2.42
1996 and newer Greater than 3,750 LVW	2.25	20.84	2.92
1991 – 1995	3.88	59.97	4.09
1988 – 1990	3.88	59.97	4.09
1984 – 1987	3.88	59.97	7.42
1979 – 1983	7.55	103.45	7.42
1975 – 1978	8.78	117.95	9.92
Pre 1975 (advisory)	16.94	175.92	14.92

Light Duty Trucks 2
Trucks greater than 6,000 pounds GVWR

	Hydrocarbons (grams per mile)	Carbon Monoxide (grams per mile)	Oxides of Nitrogen (grams per mile)
1996 and newer 5,750 ALVW or less	2.25	20.84	2.92
1996 and newer greater than 5,750 ALVW	2.25	23.74	3.25
1991 – 1995	3.88	59.97	5.75

1988 – 1990	3.88	59.97	5.75
1984 – 1987	3.88	59.97	7.42
1979 – 1983	7.55	103.45	7.42
1975 – 1978	8.78	117.95	9.92
Pre 1975 (advisory)	16.94	175.92	14.92

LVW means loaded vehicle weight. ALVW means adjusted loaded vehicle weight.

TWO SPEED IDLE EXHAUST EMISSIONS STANDARD

Light Duty Vehicles		
Idle and 2500 RPM Cutpoints		
	Hydrocarbons (ppm)	Carbon Monoxide (percent)
1981 and later	220	1.2
1979-1980	300	2.5
1975-1978	300	3.0
1968-1974	700	6.0
Pre-1968	800	7.0
Light Duty Trucks 1 **Trucks less than or equal to 6,000 pounds GVWR**		
Idle and 2500 RPM Cutpoints		
	Hydrocarbons (ppm)	Carbon Monoxide (percent)
1981 and later	220	1.2
1979-1980	300	2.5
1975-1978	300	3.0
1968-1974	700	6.0
Pre-1968	800	7.0
Light Duty Trucks 2 **Trucks greater than 6,000 pounds GVWR**		
Idle and 2500 RPM Cutpoints		
	Hydrocarbons (ppm)	Carbon Monoxide (percent)
1981 and later	220	1.2
1979-1980	300	2.5
1975-1978	300	3.0
1968-1974	700	6.0
Pre-1968	800	7.0

DIESEL VEHICLE OPACITY EMISSIONS STANDARD

All Light-Duty Vehicles and Trucks up to 8,500 lbs. GVWR	
Model Year	Diesel Smoke Opacity Standards (%)
	Dynamometer Test
All	20%

34.4.3 Opacity Test

Dynamometer Opacity Test

The RI2000 workstation and dynamometer shall be used to inspect non-OBD equipped diesel vehicles capable of being tested on the dynamometer for opacity. Vehicles shall be driven to a speed of thirty miles per hour with the load increasing as the vehicle increases speed. When the vehicle speed and dynamometer load are within ± 5% of target for five (5) seconds stabilization period, the system will take opacity samples using the diesel exhaust emissions probe during the 15 second sample period and automatically record opacity readings. A five (5) second running average of the opacity readings will be calculated by the RI 2000 analyzer. The lowest average for the test period will be utilized as the final results.

34.4.4 Evaporative Emissions Standard

Gas Cap Integrity Test

Gas caps shall be inspected using the Gas Cap Integrity Test for non OBD-equipped vehicles. Gas caps shall be subject to an initial system pressure of 30±1 inches of water. Gas caps with a leak rate of less than or equal to 60 cubic centimeters per minute shall have passed the Gas Cap Integrity Test.

34.5 On-board Diagnostic Test Standards

OBD inspection shall occur through the connection of the OBD-II SAE standardized vehicle port to the RI2000 workstation. Inspectors shall follow the inspection procedures as defined in 40 CFR 85.2222.

An on-board diagnosis system inspection failure shall occur when:

a) For MY 2001 and newer vehicles, more than one monitor in a vehicle's on-board computer is not set as ready; or,

b) For MY 1996-2000 vehicles, more than two monitors in a vehicle's on-board computer are not set as ready; or,

f) a check to determine that inspection station gas bottles used for calibration purposes are properly labeled and within relevant tolerances;

g) a check for the optimization of the analyzer;

h) functional dynamometer checks addressing coast down, roll speed, roll distance, inertia weight selection and power absorption;

i) a check of the system's ability to accurately detect background pollutant concentrations;

j) a check of evaporative test equipment (gas cap tester); and,

k) a check of on-board diagnostics testing equipment.

34.7.2 Computer and Record Audits

The Rhode Island I/M Program Manager shall provide, for the emissions inspections network, a computer system which shall interface with the Department of Revenue's computer system and be devised to allow for the capacity to make a real-time collection, analysis and reporting of test data, quality control data, and perform other analysis and reporting on all aspects of the Rhode Island Vehicle Emissions Inspection Program.

34.8 Reporting

The Rhode Island I/M Program Manager shall assist in the collection of general information detailing analysis and evaluation of test data, quality assurance, quality control, enforcement and other areas of the Rhode Island Vehicle Inspection Program.

34.9 General Provisions

34.9.1 Purpose

The purpose of this regulation is to specify the requirements for Rhode Island's Motor Vehicle Inspection/Maintenance Program.

34.9.2 Authority

These regulations are authorized pursuant to R.I. Gen. Law § 31-47-1, as amended, and have been promulgated pursuant to the procedures set forth in the R.I. Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35

34.9.3 Application

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state law, goals and policies.

34.9.4 Severability

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

c) The malfunction indicator light (MIL) does not illuminate at all when the vehicle is in the key-on/engine-off condition, even if no diagnostic trouble codes are present and the MIL has not been commanded on.

If the vehicle OBD system is not communicating with the RI2000 analyzer, the vehicle shall undergo the appropriate exhaust emissions test.

34.6 Inspection Procedures

The AIRS shall conduct emissions or OBD inspections using the inspection and calibration procedures programmed into the RI2000 analyzers by the Rhode Island I/M Program Manager. OBD inspection procedures shall comply with OBD procedures defined in 40 CFR 85.2222. Emissions test procedures shall measure and record exhaust emissions to assess compliance with standards in section 34.4 of this regulation.

34.7 Audits

The Rhode Island I/M Program Manager shall cooperate with the Department in conjunction with the conducting of audits of, records, equipment and computer data, by providing, in a timely manner, access, documentation and computer information which may be required to complete any Rhode Island I/M Program audits including, but not limited to, the following audits:

34.7.1 Equipment Audits

Quality control evaluations shall be conducted at a minimum of two overt audits per year, per inspection bay on emissions test equipment, with additional audits as needed. The audits may be conducted electronically using the centralized computer. The evaluations will include:

a) a gas audit using gases of known concentrations and comparing these concentrations to actual readings;

b) a check for tampering, worn instrumentation, blocked filters, and other conditions that would impede accurate sampling;

c) a check for critical flow;

d) a check of the Constant Volume Sample flow calibration;

e) a leak check;